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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,481	07/11/2003	Tony Hollingsworth	NE-0004	8213

7590 03/17/2006

Jane Massey Licata
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Marlton, NJ 08053

EXAMINER	
JOYCE, CATHERINE	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,481	HOLLINGSWORTH ET AL.	
	Examiner	Art Unit	
	Catherine M. Joyce	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) *2* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *App. A (2p) & App. B(2p)*.

1. Claims 1-3 are pending, and claim 2 is withdrawn from consideration as being drawn to a non-elected invention

2. Claims 1 and 3 are under examination.

3. Applicant's election with traverse of Group I, claims 1 and 3, in the reply filed on January 12, 2006 is acknowledged. The traversal is on the ground(s) that searching Groups I and II together would not pose a search burden. This argument is not found persuasive because, while the searches for the inventions of groups I and II would be overlapping they would not be coextensive. The search for the invention of group I would include a search for a composition comprising the recited polypeptide, whatever the intended use of the composition, whereas a search for the method of method of group II would include a search on all methods of treating cancer with MUC-1 compositions, including DNA compositions. Therefore, a search for one group would not be coextensive with a search for the other group. Thus, the requirement for restriction is deemed proper and is therefore made FINAL.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoover (1993, J. Clin. Oncol. 11(3):390-9), as evidenced by Byrd (2004, Cancer and Metastasis Review 23:77-99).

The claims are drawn to a composition for preventing or treating cancer in a subject comprising at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1 (claim 1), wherein at least a portion of a MUC1 cytoplasmic peptide of SEQ ID NO:1 comprises a vaccine.

It is noted that the recitation of "for preventing or treating cancer" in claim 1 and "comprises a vaccine" are merely suggestive of an intended use and are not given weight for purposes of comparing the claims with the prior art. The claims read on the active ingredient *per se*, which is "at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1".

Hoover et al. describe clinical trials wherein patients with Dukes' B2 or C3 were treated with an autologous tumor-bacillus Calmette-Guerin (BCG) vaccine composition (abstract). The vaccine compositions comprised a patient's autologous tumors cells combined with bacillus Calmette-Guerin. As evidenced by Byrd et al., MUC-1 is expressed in colon cancer cells (page 82). Thus, the autologous tumor cell vaccine compositions of Hoover would comprise a cytoplasmic tail peptide of SEQ ID NO:1. Thus, all of the claim limitations are met.

6. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 02/058450.

The claims are drawn to a composition for preventing or treating cancer in a subject comprising at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1 (claim 1), wherein at least a portion of a MUC1 cytoplasmic peptide of SEQ ID NO:1 comprises a vaccine.

It is noted that the recitation of "for preventing or treating cancer" in claim 1 and "comprises a vaccine" are merely suggestive of an intended use and are not given weight for purposes of comparing the claims with the prior art. The claims read on the active ingredient *per se*, which is "at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1".

WO 02/058450 describes a composition comprising a polypeptide having the amino acid sequence of SEQ ID NO:1 of the instant application, which is a molecule comprising at least a portion of cytoplasmic tail, a composition comprising a polypeptide having the amino acid sequence of amino acid residues 1 to 42 of SEQ ID NO:1 of the instant application, which is a molecule comprising at least a portion of the cytoplasmic tail, and a composition comprising a polypeptide having the amino acid sequence of amino acid residues 22 to 72 of SEQ ID NO:1 of the instant application, which is a molecule comprising at least a portion of the cytoplasmic tail (page 46, Example 6, and Figure 7A). A comparison of the cited sequences with SEQ ID NO:1 is included herewith as an Appendix A to this Action.

7. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,548,643.

The claims are drawn to a composition for preventing or treating cancer in a subject comprising at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1 (claim 1), wherein at least a portion of a MUC1 cytoplasmic peptide of SEQ ID NO:1 comprises a vaccine.

It is noted that the recitation of "for preventing or treating cancer" in claim 1 and "comprises a vaccine" are merely suggestive of an intended use and are not given weight for purposes of comparing the claims with the prior art. The claims read on the active ingredient *per se*, which is "at least a portion of a MUC1 cytoplasmic tail peptide of SEQ ID NO:1".

US Patent 6,548,643 teaches conjugates between an antigen and a carbohydrate polymer, wherein the conjugates may be immunogenic vaccines, and wherein the conjugates may especially comprise contain one or more repeated subunits of human mucin or non-repeated repeated regions of human mucin (abstract). US Patent 6,548,643 also teaches that immunogenic peptides may be derived from the extracellular region or intracellular region of MUC1 (column 8, lines 14-16), and that preferred peptides comprises amino acids 1-21 or 35-54 of the intracellular portion of MUC 1 (i.e. of SEQ ID NO:1 of the instant application) (columns 7 and 8, lines 25-43 and SEQ ID NOs:16 and 17), which are at least a portion of cytoplasmic tail. A comparison of the cited sequences with SEQ ID NO:1 is included herewith as an Appendix to this Action. Thus, all of the claim limitations are met.

8. No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine M. Joyce whose telephone number is 571-272-3321. The examiner can normally be reached on Monday thru Friday, 10:15 - 6:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan Unger
SUSAN UNGAR
Primary Patent Examiner

Catherine Joyce
Examiner
Art Unit 1642

GenCore version 5.1.7
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OM protein - protein search, using sw model

Run on: February 3, 2006, 19:46:55 ; Search time 198 Seconds
(without alignments)
159.774 Million cell updates/sec

Title: US-10-618-481-1
Perfect score: 395
Sequence: 1 CQCRRKNYGQLDIFPARDTY.....NGGSSLSYTNPAVAAASANL 72

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_21:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
9: geneseqp2005s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	395	100.0	72	5	ABB79839	Abb79839 MUC1 cyto
2	395	100.0	146	9	ADY53531	Ady53531 Truncated
3	395	100.0	171	9	ADY53532	Ady53532 Truncated
4	395	100.0	275	9	ADY53533	Ady53533 Truncated
5	395	100.0	312	5	AAU84810	Aau84810 Human MUC
6	395	100.0	863	9	ADY53535	Ady53535 Truncated
7	395	100.0	1255	5	ABP56040	Abp56040 MUC1 rece
8	395	100.0	1255	6	ABB82568	Abb82568 MUC1/REP
9	395	100.0	1255	6	ABR47537	Abr47537 Breast ca
10	395	100.0	1255	6	ABR92124	Abr92124 Human cer
11	395	100.0	1255	7	ADD45111	Add45111 Human Pro
12	395	100.0	1255	7	ADE54622	Ade54622 Human Pro
13	395	100.0	1255	8	ADQ29694	Adq29694 Human col
14	395	100.0	1255	9	ADY53504	Ady53504 Full-leng
15	395	100.0	1255	9	AEA24480	Aea24480 Protein s
16	395	100.0	1255	9	AEA63704	Aea63704 Human muc
17	395	100.0	1255	9	AEB87750	Aeb87750 Human muc
18	395	100.0	1255	9	AEC04621	Aec04621 Human bre
19	391	99.0	72	8	ADU15747	Adu15747 Full leng
20	391	99.0	93	3	AAY71023	Aay71023 Human Muc
21	391	99.0	110	8	ADI57780	Adi57780 Human bre
22	391	99.0	127	8	ADI57781	Adi57781 Human bre
23	391	99.0	136	9	AEC04627	Aec04627 Human bre
24	391	99.0	150	8	ADI57762	Adi57762 Human bre
25	391	99.0	157	9	AEC04625	Aec04625 Human bre
26	391	99.0	159	9	AEC04626	Aec04626 Human bre
27	391	99.0	166	9	AEC04624	Aec04624 Human bre
28	391	99.0	168	8	ADI57763	Adi57763 Human bre
29	391	99.0	180	8	ADI57774	Adi57774 Human bre
30	391	99.0	203	9	AEC04622	Aec04622 Human bre
31	391	99.0	215	3	AAY71029	Aay71029 Ubiquitin
32	391	99.0	230	6	AAB37802	Aae37802 Human muc
33	391	99.0	230	7	ADJ68550	Adj68550 Human hea
34	391	99.0	230	8	ADI57756	Adi57756 Human bre
35	391	99.0	232	8	ADI57775	Adi57775 Human bre
36	391	99.0	233	9	ADY53534	Ady53534 Truncated
37	391	99.0	239	2	AAR89423	Aar89423 Mucin-der
38	391	99.0	240	2	AAR89422	Aar89422 Mucin-der
39	391	99.0	240	7	ADE48140	Ade48140 MUC1/V pr
40	391	99.0	241	8	ADI57768	Adi57768 Human bre
41	391	99.0	249	7	ADE48141	Ade48141 MUC1/V/al
42	391	99.0	252	6	ADA50577	Ada50577 Mucin 1 (
43	391	99.0	252	6	AAE37798	Aae37798 Human muc
44	391	99.0	252	8	ADU49616	Adu49616 Human muc
45	391	99.0	255	2	AAR89420	Aar89420 Mucin-der

ALIGNMENTS

RESULT 1
ABB79839
ID ABB79839 standard; protein; 72 AA.
XX
AC ABB79839;
XX
DT 25-NOV-2002 (first entry)
XX
DE MUC1 cytoplasmic domain.
XX
KW MUC1; mucin; human; antitumour; cytostatic; cancer; gene therapy.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 23. .32
FT /note= "peptide specifically described in Claim 56"
FT Binding-site 40. .44
FT /note= "glycogen synthase kinase 3-beta binding site"
FT Modified-site 41
FT /note= "Phosphorylated by protein kinase C-delta"
FT Modified-site 44
FT /note= "Phosphorylated by glycogen synthase kinase 3-
FT beta"
FT Binding-site 46. .49
FT /note= "c-Src binding site"
FT Binding-site 50. .59
FT /note= "beta-catenin binding site"
XX
PN WO200258450-A2.
XX
PD 01-AUG-2002.
XX
PF 26-DEC-2001; 2001WO-US049923.
XX
PR 22-DEC-2000; 2000US-0257590P.
PR 27-JUL-2001; 2001US-0308307P.
XX
PA (DAND) DANA FARBER CANCER INST INC.
XX
PI Kufe DW;
XX
DR WPI; 2002-666881/71.
XX
PT Identifying compounds that inhibit the binding of MUC1 to a tumor
PT progressor, or inhibits the phosphorylation of MUC1 by the tumor
PT progressor, by contacting the MUC1 test agent with the tumor progressor

Appendix A, page 1

PT in the presence of the test compound.
XX
PS Example 6; Fig 7A; 82pp; English.
XX
CC The present sequence is the cytoplasmic domain (CD) of mucin MUC1, a
CC glycoprotein expressed aberrantly at high levels over the surface of
CC breast, prostate, lung and other types of carcinoma cells. MUC1 binds via
CC its CD to c-Src, epidermal growth factor receptor (EGF-R), p120ctn and
CC protein kinase C (PKC)-delta. c-Src, EGF-R and PKC-delta phosphorylate
CC the MUC1 CD, leading to enhanced binding of beta-catenin to MUC1.
CC Phosphorylation by EGF-R leads to enhanced binding of c-Src to MUC1. The
CC invention features methods of identifying compounds that inhibit (a) the
CC binding of MUC1 to a tumour progressor (e.g. beta-catenin, c-Src, EGF-R,
CC p120ctn, or PKC-delta) and/or (b) phosphorylation of MUC1 by tumour
CC progressors with kinase activity (e.g. c-Src, EGF-R or PKC-delta). The
CC invention also includes a method for identifying a compound that enhances
CC binding to, and phosphorylation of, MUC1 by glycogen synthase kinase 3-
CC beta. An antisense oligonucleotide that hybridises to a MUC1 transcript
CC or to a tumour progressor transcript can be used to inhibit expression of
CC MUC1 or a tumour progressor in a cancer cell, especially a breast cancer
CC cell, or a lung, colon, pancreatic, renal, stomach, liver, bone,
CC haematological (e.g. leukaemia, lymphoma), neural tissue, melanoma,
CC ovarian, testicular, prostate, cervical, vaginal, or bladder cancer cell.
CC A peptide fragment (see ABB79844) of the MUC1 CD, or a polynucleotide
CC encoding it, can be used to inhibit binding of MUC1 to beta-catenin in a
CC cancer cell that expresses MUC1
XX
SQ Sequence 72 AA;

Query Match 100.0%; Score 395; DB 5; Length 72;
Best Local Similarity 100.0%; Pred. No. 8.2e-43;
Matches 72; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 60

Qy         61 TNPAVAAASANL 72
              ||||||||||||
Db         61 TNPAVAAASANL 72
```

RESULT 2
ADY53531
ID ADY53531 standard; protein; 146 AA.
XX
AC ADY53531;
XX
DT 19-MAY-2005 (first entry)
XX
DE Truncated MUC1 growth factor receptor isoform, SEQ ID 37.
XX
KW antibody; antigen-binding fragment; MUC1 receptor;
KW growth factor receptor; cancer; cytostatic.
XX
OS Homo sapiens.
XX
PN WO2005019269-A2.
XX
PD 03-MAR-2005.
XX
PF 26-AUG-2004; 2004WO-US027954.
XX
PR 26-AUG-2003; 2003US-0498260P.
XX
PA (MINE-) MINERVA BIOTECHNOLOGIES CORP.
XX
PI Bamdad CC;
XX
DR WPI; 2005-214228/22.
DR N-PSDB; ADY53536.
XX
PT Antibody or antigen-binding fragment that specifically binds to a
PT tetrapeptide sequence which is portion of MUC1 receptor that functions as
PT growth factor receptor, useful for diagnosing and treating cancer.
XX
PS Claim 68; SEQ ID NO 37; 204pp; English.
XX
CC The invention relates to a novel antibody or its antigen-binding fragment
CC that specifically binds to a tetrapeptide sequence which is a portion of
CC a MUC1 receptor that functions as a growth factor receptor. The invention
CC further comprises a series of compositions, methods, kits, articles and
CC species associated primarily with the diagnosis and/or treatment of cell
CC proliferation, specifically cancer. The antibody or its antigen-binding
CC fragment is useful for treating a subject having cancer caused by
CC aberrant expression of MUC1, which involves administering the antibody or
CC its antigen-binding fragment in an amount effective to block interaction
CC of a natural ligand and portion of MUC1 receptor that remains attached to
CC the cell surface after cleavage of the receptor, or in an amount
CC effective to reduce shedding of an interchain binding region of the MUC1
CC receptor. The antibody or its antigen-binding fragment has cytostatic
CC activity. The cancer may be of the breast, prostate, lung, ovary,
CC colorectal, pancreas and brain. The antibody or its antigen-binding
CC fragment is useful for determining aggressiveness and/or metastatic
CC potential of a cancer, which involves contacting a sample obtained from a
CC subject suspected of having cancer with the antibody or its antigen-
CC binding fragment that specifically binds to peptides expressed on the
CC cell surface, and determining the amount of the antibody or its antigen-
CC binding fragment bound to the sample. The antibody or its antigen-binding
CC fragment is useful for diagnosing the presence of absence of cancer or
CC the aggressiveness of a cancer. This sequence represents a truncated MUC1
CC growth factor receptor isoform of the invention.
XX
SQ Sequence 146 AA;

Query Match 100.0%; Score 395; DB 9; Length 146;
Best Local Similarity 100.0%; Pred. No. 2.1e-42;
Matches 72; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         75 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 134

Qy         61 TNPAVAAASANL 72
              ||||||||||||
Db        135 TNPAVAAASANL 146
```

RESULT 3
ADY53532
ID ADY53532 standard; protein; 171 AA.
XX
AC ADY53532;
XX
DT 19-MAY-2005 (first entry)
XX
DE Truncated MUC1 growth factor receptor isoform, SEQ ID 38.
XX
KW antibody; antigen-binding fragment; MUC1 receptor;
KW growth factor receptor; cancer; cytostatic.
XX
OS Homo sapiens.
XX
PN WO2005019269-A2.
XX
PD 03-MAR-2005.
XX
PF 26-AUG-2004; 2004WO-US027954.
XX
PR 26-AUG-2003; 2003US-0498260P.
XX
PA (MINE-) MINERVA BIOTECHNOLOGIES CORP.
XX
PI Bamdad CC;
XX
DR WPI; 2005-214228/22.

```
RESULT 3
US-09-134-916A-2
; Sequence 2, Application US/09134916A
; Patent No. 6328956
;  GENERAL INFORMATION:
;    APPLICANT:  CHAMBON, Pierre
;    APPLICANT:  KIENY, Marie-Paule
;    APPLICANT:  LATHE, Richard
;    APPLICANT:  HAREUVENI, Mara
;    TITLE OF INVENTION:  PHARMACEUTICAL COMPOSITION FOR THE
;    TITLE OF INVENTION:  TREATMENT OR PREVENTION OF A MALIGNANT TUMOR
;    NUMBER OF SEQUENCES:  5
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BURNS, DOANE, SWECKER & MATHIS, L.L.P.
;      STREET:  P.O. Box 1404
;      CITY:  Alexandria
;      STATE:  Virginia
;      COUNTRY:  United States
;      ZIP:  22313-1404
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/134,916A
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/479,537
;      FILING DATE:  07-JUN-1995
;      APPLICATION NUMBER:  FR 90/13101
;      FILING DATE:  23-OCT-1990
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  WO PCT/FR91/00835
;      FILING DATE:  23-OCT-1991
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/039,320
;      FILING DATE:  04-APR-1993
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/403,576
;      FILING DATE:  14-MAR-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Teskin, Robin L.
;      REGISTRATION NUMBER:  35,030
;      REFERENCE/DOCKET NUMBER:  017753-025
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 836-6620
;      TELEFAX:  (703) 836-2021
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  2035 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  128..1899
;      OTHER INFORMATION:  /note= "The amino acids spanning
;      OTHER INFORMATION:  128 to 1899 constitute a repeated region wherein the repeat i
;      OTHER INFORMATION:  20 amino acids, 17 of which are fixed. The number of such
;      OTHER INFORMATION:  repeats varies from 1 to 40."
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  134
;      OTHER INFORMATION:  /note= "Amino acid 134 is X1 = Xaa
;      OTHER INFORMATION:  Xaa Xaa which is the codon for Pro or Ala wherein Pro = CCT,
;      OTHER INFORMATION:  CCC, CCA, or CCG; and Ala = GCT, GCC, GCA, or GCG."
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  144
;      OTHER INFORMATION:  /note= "Amino acid 144 is Y = Xaa
;      OTHER INFORMATION:  which is the codon for Thr or Asn wherein Thr = ACT, ACC, AC
;      OTHER INFORMATION:  or ACG; and Asn = AAT or AAC."
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  147
;      OTHER INFORMATION:  /note= "Amino acid 147 is X2 = Xaa
;      OTHER INFORMATION:  which is the codon for Pro or Ala wherein Pro = CCT, CCC, CC
;      OTHER INFORMATION:  or CCG; and Ala = GCT, GCC, GCA, or GCG."
;    FEATURE:
;      NAME/KEY:  Peptide
;      LOCATION:  1..21
;      OTHER INFORMATION:  /note= "Amino acids 1 to 21 are a
;      OTHER INFORMATION:  21 amino acid precursor sequence."
US-09-134-916A-2

  Query Match             99.0%;  Score 391;  DB 2;  Length 2035;
  Best Local Similarity   98.6%;  Pred. No. 2.2e-39;
  Matches   71;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1964 CQCRRKNYGQLDIFPARDTYHPMSEYPTYHTHGRYVPPSSTDRSPYEKVSAGNGGSSLSY 2023

Qy         61 TNPAVAAASANL 72
              ||||||| ||||
Db       2024 TNPAVAATSANL 2035


RESULT 4
US-09-593-870A-16
; Sequence 16, Application US/09593870A
; Patent No. 6548643
; GENERAL INFORMATION:
;  APPLICANT: McKenzie, Ian F.C.
;  APPLICANT:  Apostolopoulos, Vasso
;  APPLICANT:  Pietersz, Geoff Allan
;  TITLE OF INVENTION: Antigen Carbohydrate Compounds and Their
;  TITLE OF INVENTION:  Use in Immunotherapy
;  FILE REFERENCE: 2368-McKenzie
;  CURRENT APPLICATION NUMBER: US/09/593,870A
;  CURRENT FILING DATE:  2000-06-14
;  PRIOR APPLICATION NUMBER: 09/223,043
;  PRIOR FILING DATE: 1998-12-30
;  NUMBER OF SEQ ID NOS: 69
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 16
;   LENGTH: 23
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-593-870A-16

  Query Match             31.4%;  Score 124;  DB 2;  Length 23;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-08;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 CQCRRKNYGQLDIFPARDTYH 21
              |||||||||||||||||||||
Db          3 CQCRRKNYGQLDIFPARDTYH 23


RESULT 5
US-09-593-870A-17
; Sequence 17, Application US/09593870A
; Patent No. 6548643
; GENERAL INFORMATION:
;  APPLICANT: McKenzie, Ian F.C.
;  APPLICANT:  Apostolopoulos, Vasso
;  APPLICANT:  Pietersz, Geoff Allan
;  TITLE OF INVENTION: Antigen Carbohydrate Compounds and Their
;  TITLE OF INVENTION:  Use in Immunotherapy
;  FILE REFERENCE: 2368-McKenzie
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Appendix B, page 1

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;  CURRENT APPLICATION NUMBER: US/09/593,870A
;  CURRENT FILING DATE:  2000-06-14
;  PRIOR APPLICATION NUMBER: 09/223,043
;  PRIOR FILING DATE: 1998-12-30
;  NUMBER OF SEQ ID NOS: 69
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 17
;   LENGTH: 20
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-593-870A-17

  Query Match           27.1%;  Score 107;  DB 2;  Length 20;
  Best Local Similarity  100.0%;  Pred. No. 1.3e-06;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         35 YVPPSSTDRSPYEKVSAGNG 54
              ||||||||||||||||||||
Db          1 YVPPSSTDRSPYEKVSAGNG 20


RESULT 6
US-09-593-870A-48
; Sequence 48, Application US/09593870A
; Patent No. 6548643
; GENERAL INFORMATION:
;  APPLICANT: McKenzie, Ian F.C.
;  APPLICANT:  Apostolopoulos, Vasso
;  APPLICANT:  Pietersz, Geoff Allan
;  TITLE OF INVENTION: Antigen Carbohydrate Compounds and Their
;  TITLE OF INVENTION:  Use in Immunotherapy
;  FILE REFERENCE: 2368-McKenzie
;  CURRENT APPLICATION NUMBER: US/09/593,870A
;  CURRENT FILING DATE:  2000-06-14
;  PRIOR APPLICATION NUMBER: 09/223,043
;  PRIOR FILING DATE: 1998-12-30
;  NUMBER OF SEQ ID NOS: 69
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 48
;   LENGTH: 21
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-593-870A-48

  Query Match           27.1%;  Score 107;  DB 2;  Length 21;
  Best Local Similarity  100.0%;  Pred. No. 1.3e-06;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         35 YVPPSSTDRSPYEKVSAGNG 54
              ||||||||||||||||||||
Db          2 YVPPSSTDRSPYEKVSAGNG 21


RESULT 7
US-08-560-005-3
; Sequence 3, Application US/08560005
; Patent No. 6001354
;  GENERAL INFORMATION:
;    APPLICANT:  Pot, David A.
;    APPLICANT:  Williams, Lewis T.
;    APPLICANT:  Jefferson, Anne Bennett
;    APPLICANT:  Majerus, Philip W.
;    TITLE OF INVENTION:  No. 6001354el Grb2 Associating Protein and Nucleic
;    TITLE OF INVENTION:  Acids Encoding Therefor
;    NUMBER OF SEQUENCES:  10
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Townsend and Townsend and Crew
;      STREET:  One Market Plaza, Steuart Tower, Suite 2000
;      CITY:  San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94105
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/560,005
;      FILING DATE:
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Dow, Karen B.
;      REGISTRATION NUMBER:  29,684
;      REFERENCE/DOCKET NUMBER:  2307K-0624000
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-326-2400
;      TELEFAX:  415-326-2422
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  398 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Region
;      LOCATION:  1..398
;      OTHER INFORMATION:  /note= "celegptase"
US-08-560-005-3

  Query Match           18.1%;  Score 71.5;  DB 2;  Length 398;
  Best Local Similarity  31.5%;  Pred. No. 1.4;
  Matches   28;  Conservative   11;  Mismatches   23;  Indels   27;  Gaps    5;

Qy          6 KNYGQLDIFPARDT-------------YH--PMSEYPTYHT-------HGRYVPPSSTDR 43
              ||    |::   |:              :|  |::  |||           |: | || |||
Db        190 KNGTHLELLDTREQLKRALVERDAFIGFHEQPVTFEPTYRVTVGTTEQDGKRV-PSWTDR 248

Qy         44 SPYEKVSAGNGGSSLSYTNPAVAAASANL 72
                |:    |:| : |||||    | || :|
Db        249 ILYK----GDGITGLSYTNNKKAVASDHL 273


RESULT 8
US-09-418-540-3
; Sequence 3, Application US/09418540
; Patent No. 6296848
;  GENERAL INFORMATION:
;    APPLICANT:  Pot, David A.
;    APPLICANT:  Williams, Lewis T.
;    APPLICANT:  Jefferson, Anne Bennett
;    APPLICANT:  Majerus, Philip W.
;    TITLE OF INVENTION:  No. 6296848el Grb2 Associating Protein and Nucleic
;    TITLE OF INVENTION:  Acids Encoding Therefor
;    NUMBER OF SEQUENCES:  10
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Townsend and Townsend and Crew
;      STREET:  One Market Plaza, Steuart Tower, Suite 2000
;      CITY:  San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94105
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/418,540
;      FILING DATE:  14-OCT-1999
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/560,005
;      FILING DATE:  17-NOV-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Dow, Karen B.
```